



# Information Age Transformation ASD(NII) Vision, Status, and Challenges

presented to  
8<sup>th</sup> IC2RTS Symposium  
June 17, 2003

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**PDASD(NII)**



# Agenda

- *The Nature of Transformation  
.....and its Relationship to the NII Vision and Goals*
- *NII Initiatives*
- *A Status Report*
- *Challenges*



# Transforming Defense

- *The Mission Space*
  - *Adversaries and their capabilities*
  - *The conflict environment*
- *The Force*
  - *How we organize, prepare, and operate*
  - *Force Capabilities*
- *The Management of Defense*
  - *Policies and practices associated with Information, Personnel, and Acquisition*
  - *The processes of innovation and evolution*



# Information Age DoD Transformation



The Information Age requires we re-think everything!



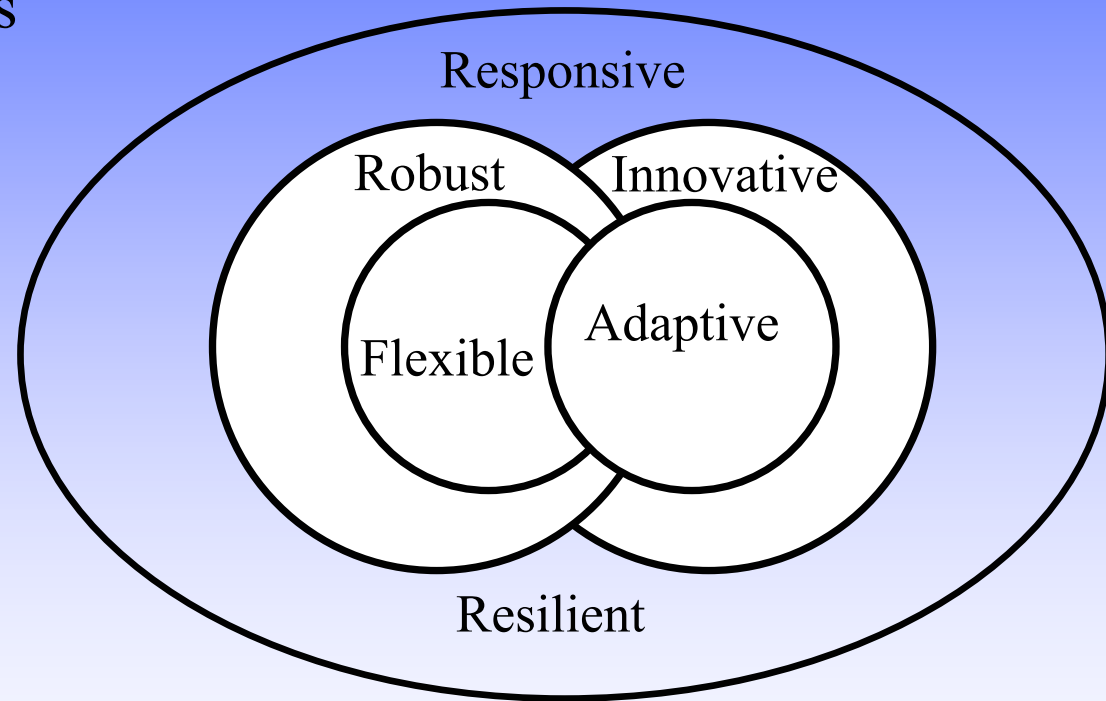
# The Mission Space

- *Will 2025 be a linear extrapolation of 2003?*
- *Lessons from an abridged military history of the 20<sup>th</sup> Century*
- *Implications*
  - *From threat-based to capabilities-based planning*
  - *Agility as an essential Measure of Merit (MoM)*



# Agility

- The Answer to Uncertainty and Risk is Agility
- Agility Has Six Components



**Robust** - effective across a range of conditions;

**Responsive** - speed of recognition and action;

**Flexible** - multiple ways to succeed, seamless shifting;

**Innovative** – learning and solving

**Adaptive** – alteration in C2 organization and process.

**Resilient** – able to function / reconstitute when damaged



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# Network-Centric Warfare

*...The Emerging Theory of War*

Office of Force Transformation

- Sources of Power
- Relationships among power centers
- Linkage to outcome
- Linkage to political objectives



CARL VON CLAUSEWITZ

## ON WAR

*Indexed Edition*

*Edited and Translated by*

*and PETER PARET*

## NETWORK CENTRIC WARFARE

Developing and Leveraging  
Information Superiority

— 2<sup>nd</sup> Edition (Revised) —

David S. Alberts  
John J. Garstka  
Frederick P. Stein

CCRP

## SUN TZU

# THE ART OF WAR

TRANSLATED AND WITH AN INTRODUCTION BY  
SAMUEL B. GRIFFITH  
FOREWORD BY B.H. LIDDELL HART





# Tenets of NCW

*A robustly networked force*



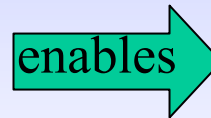
*Information Sharing*

*Information Sharing  
and  
Collaboration*



*Quality of information  
and  
Shared Situational Awareness*

*Shared situational awareness*



*Collaboration  
and  
Self-synchronization*

These, in turn, dramatically increase *mission effectiveness*



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# The Management of Defense: The View from NII

- *Vision: Power to the Edge*
- *Goals:*
  - Build the Net*
  - Populate the Net*
  - Protect the Net*
- *Creates the foundation for and enables the development of net-centric concepts of operations (NCW/NCO) and business processes*



# Power to the Edge

- Power is about the ability to accomplish something in a timely manner overcoming resistance
- Edge is where the action is; where the organization or system meets the real world
- Power to the Edge is about providing more means and opportunities to the entities that gets things done
- Power to the Edge Principles
  - Post Before Process
  - Peer to Peer Interactions
  - A Dumb Net (emphasis on end-to-end)



# NII Vision and Goals and NCW

**Build the Net  
Populate the Net  
Power to the Edge Policy**

*A robustly networked force*



*Information Sharing*

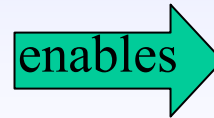
*Information Sharing  
and  
Collaboration*



*Quality of information  
and  
Shared Situational Awareness*

**Secure,  
Collaborative  
Environment**

*Shared situational awareness*



*Collaboration  
and  
Self-synchronization*

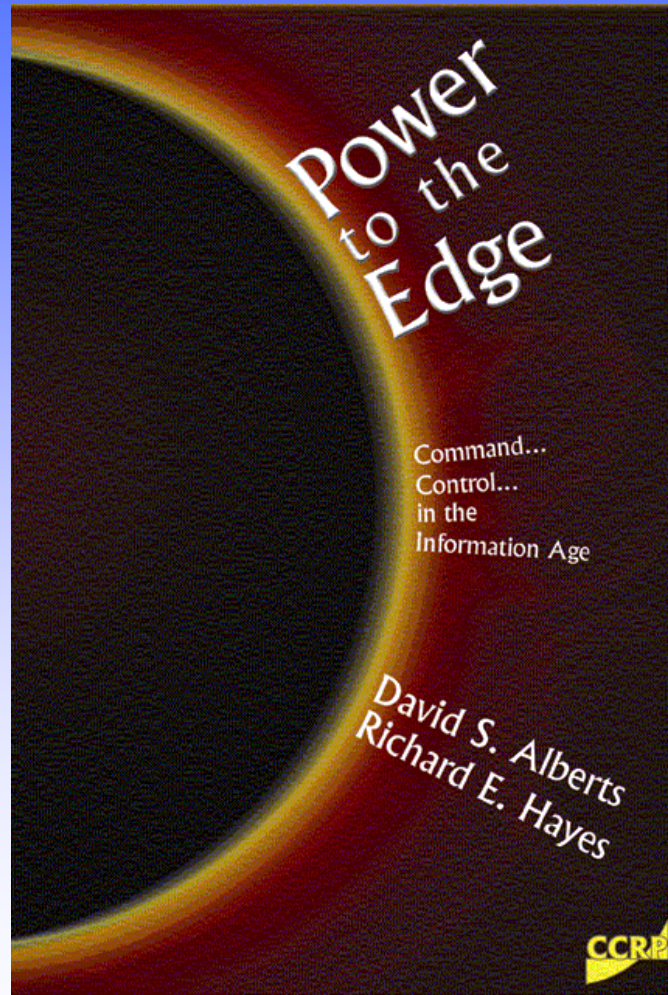
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# Information Age Command...Control Concepts

	<b>Industrial Age</b>	<b>Information Age</b>
<b>Dealing with the future</b>	Predict/Plan Perfect Tasks	Prepare/Adapt Develop Agility
<b>Developing Capabilities</b>	Define Requirements Engineer Insert Technology Test Systems	Experiment Grow Co-evolve MCPs Assess Operations
<b>Command... Control...</b>	Do what I tell you Synchronize Control Constrain Subordinates Staff	Do what makes sense Self-synchronize Converge Enable Subordinates Collaborate
<b>Dealing with Information</b>	Push Use & Distribute Server-Client Clear People	Pull Post Before Process Peer to Peer Sanction Transaction



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# NII Initiatives

- ***Build the Net***
  - *GIG Bandwidth Expansion (GIG-BE)*
  - *Laser Satellite Comms*
  - *JTRS wide-band network waveform*
  - *Spectrum assurance*
  - ...
- ***Populate the Net***
  - *Network Centric Enterprise Services (NCES)*
  - *Post Before Process policies and practices (regulatory regime)*
  - *USD(I) Initiatives*
- ***Protect the Net (and deny the enemy an information advantage)***
  - *IA*
  - *Wireless Policy*





# Status

- *Core Policies, Budget, Programs established or in-process*
- *Focus is now on Awareness and Execution*
- *Mentor and work with PMs and Acquisition Communities*
- *Collaborative with JFCOM, STRATCOM and others to understand implications for concepts of operation, command, control*



# C2 Research Challenges

- *Command in a net-centric environment*
- *Understanding and establishing trust in a net-centric environment*
- *Living in a “pull” environment*
- *Shared Awareness*
- *Control (self-synchronization) as an emergent property*
- *Collaborative processes*
- *Net-centric Metrics*